

From: [Eberhardt, Maja](#)
To: ctanaka@sbtribes.com
Cc: [Macchio, Lisa](#)
Subject: RE: WQS language
Date: Thursday, June 13, 2019 3:31:00 PM

Hi Candon,

Here's some language you could use if you would like to adopt aquatic life criteria for aluminum (please also discussion below about the option not to adopt aluminum criteria). This language is based on the recent proposed language for aluminum ALC for Oregon. The language would be a footnote that is referenced in the entry for aluminum in the toxics criteria table:

Acute (CMC) and chronic (CCC) freshwater aluminum criteria values for a site shall be calculated using the 2018 Aluminum Criteria Calculator (*Aluminum Criteria Calculator V.2.0.xlsx*), or a calculator in R or other software package using the same 1985 Guidelines calculation approach and underlying model equations as in the *Aluminum Criteria Calculator V.2.0.xlsx* as established in the EPA's Final Aquatic Life Ambient Water Quality Criteria for Aluminum 2018 (EPA 822-R-18-001). Calculator outputs shall be used to calculate criteria values for a site that protect aquatic life throughout the site under the full range of ambient conditions, including when aluminum is most toxic given the spatial and temporal variability of the water chemistry at the site.

The criteria for aluminum are expressed as total recoverable metal concentrations.

The CMC is the highest allowable one-hour average instream concentration of aluminum.

The CMC is not to be exceeded more than once every three years. The CMC is rounded to two significant figures.

The CCC is the highest allowable four-day average instream concentration of aluminum.

The CCC is not to be exceeded more than once every three years. The CCC is rounded to two significant figures.

EPA 822-R-18-001, Final Aquatic Life Ambient Water Quality Criteria for Aluminum 2018, is incorporated by reference into this section. All approved material is available from U.S. Environmental Protection Agency, Office of Water, Health and Ecological Criteria Division (4304T), 1200 Pennsylvania Avenue NW, Washington, DC 20460; telephone number: (202) 566-1143, <https://www.epa.gov/wqc/aquatic-life-criteria-aluminum>.

This language relies only on model outputs to accommodate the bi-directional relationship between inputs and outputs, and it does not provide default criteria values. The preamble of the proposed rule for Oregon aluminum ALC does discuss some options for deriving final criteria values from multiple model outputs. Also, we have not completed ESA consultation on the aluminum criteria for Oregon, and this would be done before we promulgate a final rule.

Another option for you is not to adopt aluminum criteria at this time. Aluminum is not a priority pollutant, and if anthropogenic sources of aluminum are not of concern in reservation waters, including from upstream sources that may impact reservation waters, then it might make sense to wait until the final Oregon promulgation and ESA consultation have been completed before adopting aluminum criteria, or adopting them only if a need is identified in the future. In any case, your narrative toxics criterion will cover aluminum contamination if needed and EPA's 304(a) criteria recommendation is available to implement the narrative.

Thanks! Please let me know if you have questions, I'm happy to discuss this with you further.

Maja

From: Eberhardt, Maja
Sent: Tuesday, June 11, 2019 10:58 AM
To: Candon Tanaka <ctanaka@sbtribes.com>

Cc: Macchio, Lisa <Macchio.Lisa@epa.gov>

Subject: RE: WQS language

Hi Candon,

Let me put a hold on the aluminum language briefly, I believe the toxicity response to hardness is not unidirectional for aluminum as it is for copper so a different approach may be needed for protective default inputs. Let me talk to others here and get back to you soon.

Thanks, sorry.

Maja

From: Eberhardt, Maja

Sent: Monday, June 10, 2019 4:44 PM

To: Candon Tanaka <ctanaka@sbtribes.com>

Cc: Macchio, Lisa <Macchio.Lisa@epa.gov>

Subject: WQS language

Hi Candon,

Thanks for a good call today, we covered a lot of ground and I hope we were able to provide most of the information you need. I've attached the Swinomish language for their copper criteria, and language for the aluminum criteria that is parallel to the copper language for your consideration. The copper language includes basic implementation language and references EPA's default criteria document, and this language translates almost directly to the aluminum criteria. pH is important to aluminum toxicity, and is hard to predict using reference conditions, so it should be measured directly if possible.

Let me know if you would like assistance with human health criteria for arsenic, dioxin, and thallium.

I'll wait to hear back from you about your discussion with Rochelle on the cyanotoxin criteria.

Thanks! Please let me know if you have more questions. I'll look forward to seeing your draft standards.

Maja

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Maja Eberhardt

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